

### Office Action Summary

**Application No.**

10/550,945

**Applicant(s)**

HEALD ET AL.

**Examiner**

Irene Marx

**Art Unit**

1651

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 April 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

The previous Office action mailed 5/7/10 is vacated in response to the interview of 5/24/10, and replaced with the current Office action.

The amendment filed 4/6/10 is acknowledged. Claims 1-16 are being considered on the merits.

The rejection under 35 U.S.C 112, first paragraph regarding deposit is withdrawn in view of applicant's averments..

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is vague, indefinite and confusing in the repetition of "and substantially free from odoriferous by-products".

Claim 1 is further vague and indefinite in that the extent of "has higher purity than said vanillin product" cannot be readily assessed in this context, since the extent of purity in step (ii) is unclear. The standard for "higher" is also uncertain.

Claim 15 is vague and indefinite in the recitation of "said microorganisms consist in ...", since it is apparent that one sole strain is intended. It is recommended that claim 11 be amended to singular rather than plural for "microorganism" and that claim 15 be amended to recite "wherein said microorganism is". Also to clarify the invention, the genus/species of the deposited strain should be claim designated.

Claim 16 is vague, indefinite and confusing in the recitation of "said microorganisms" regarding the sole strain of claim 15 or a mutant thereof. The nature and properties of the mutant are not defined with sufficient particularity. It is noted that the material biotransformed is not identified with any particularity.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rabenhorst *et al.* (U.S. Patent No. 6,133,003) taken with Muheim *et al.* (U.S. Patent No. 6,235,507) and Makin (U.S. Patent No. 4,474,994), all of record.

The claims are directed to a process of preparing a vanillin material by a biotransformation process, purification by precipitation and by means of supercritical fluids/liquefied gases/gases, wherein the biotransformation includes using a strain of *Amycolatopsis* or *Streptomyces setonii*.

Rabenhorst *et al.* disclose the preparation of vanillin materials by biotransformation with a strain of *Amycolatopsis*. See, e.g., Examples 2 and 3.

Muheim *et al.* disclose the preparation of vanillin materials by biotransformation with *S. setonii*. See, e.g., Examples.

The references differ from the claimed invention in that purification of the vanillin produced is not effected by precipitation and by means of supercritical fluids/liquefied gases/gases.

However, Makin discloses the preparation of vanillin materials with high vanillin content from crude vanillin originated from natural sources, e.g. wood products. Regarding precipitation the reference suggests that such a step is well known in the art for vanillin purification. See, e.g., col. 1, line 64. Makin teaches that the subsequent extraction of the vanillin is performed by treatment with supercritical CO<sub>2</sub>. See, e.g., Examples. In addition, the reference discloses the use of ethane and ethylene at temperatures between 31.6% to 90°C.

The process conditions and products discussed in the references appear to be substantially the same as claimed. However, even if they are not, the adjustment of process conditions for optimization purposes identified as result-effective variables cited in the references would have been *prima facie* obvious to a person having ordinary skill in the art, since such adjustment is at the essence of biotechnical engineering.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to modify the process of Rabenhorst *et al.* and/or Muheim *et al.* by purifying the vanillin produced by precipitation and using a liquefied gas at high pressure but low temperature as taught by Makin to provide purified vanillin for the expected benefit of maximizing the purity of vanillin, a valuable aroma and flavoring compound used widely in food preparation in homes and industry.

Thus, the claimed invention as a whole was clearly *prima facie* obvious, especially in the absence of evidence to the contrary.

#### ***Response to Arguments***

Applicant's arguments have been fully considered but they are not deemed to be persuasive.

Applicant's arguments directed to Rabenhorst and the use of DSM 9991 and 9992 are not presented in Declaration form and thus are not probative of unexpected results. To be of probative value, any objective evidence must be factually supported by an appropriate affidavit or declaration which includes evidence of unexpected results, for example. See, for example, *In re De Blauwe*, 736 F.2d 699, 705, 222 USPQ 191, 196 (Fed. Cir. 1984) ("It is well settled that unexpected results must be established by factual evidence." "[A]ppellants have not presented any experimental data showing that prior heat-shrinkable articles split. Due to the absence of tests comparing appellant's heat shrinkable articles with those of the closest prior art, we conclude that appellant's assertions of unexpected results constitute mere argument."). See also *In re Lindner*, 457 F.2d 506, 508, 173 USPQ 356, 358 (CCPA 1972); *Ex parte George*, 21 USPQ2d 1058 (Bd. Pat. App. & Inter. 1991).

The arguments are not in declaration form, do not present data, do not identify the person doing the experiments, do not have the penalty paragraph, etc. In addition, the only strain that

appears to produce the touted results in this record is *Amycolatopsis* sp. IMI390106, which is only in dependent claim 15 and not in the independent claim.

The scope of the showing must be commensurate with the scope of claims to consider evidence probative of unexpected results, for example. In re Dill, 202 USPQ 805 (CCPA, 1979), In re Lindner 173 USPQ 356 (CCPA 1972), In re Hyson, 172 USPQ 399 (CCPA 1972), In re Boesch, 205 USPQ 215, (CCPA 1980), In re Grasselli, 218 USPQ 769 (Fed. Cir. 1983), In re Clemens, 206 USPQ 289 (CCPA 1980). It should be clear that the probative value of the data is not commensurate in scope with the degree of protection sought by the claims.

Therefore, applicant's arguments are not persuasive of error in the rejection.

Therefore the rejection is deemed proper and it is adhered to.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irene Marx whose telephone number is (571) 272-0919. The examiner can normally be reached on M-F (6:30-3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300 .

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Irene Marx/  
Primary Examiner  
Art Unit 1651